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Forage News [2003-05]

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FORAGE NEWS

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LOSSES AND DRYING RATES OF DIFFERENT CONDITIONERS

Hay producers are always looking for new machinery innovations that might shave a couple hours off the drying time of their hay. While this is important, there are a couple other factors that should not be ignored.

First, the greatest differences in drying rate will result from windrow management, regardless of the hay conditioner involved. A wider swath will dry faster than a narrow swath!

Second, proper adjustment of the conditioner is more important than the type of conditioner. An improperly adjusted conditioner doesn't improve drying. In many farm demonstrations, forage from a "new" conditioner dries faster than from the "old" conditioner simply because it is being compared to a wore and/or out of adjustment conditioner.

There are differences in machinery design. Research in Michigan makes two important comparisons (Table 1). First, dry matter losses are about 1.5% higher with a disc mower than with a cutter bar mower. Second, dry matter losses are about 2% higher with steel flails than rolls.

Table 1. Comparison of dry matter losses with three mower-conditioners.

Mower type	Conditioner type	Mower Conditioner	Total Losses
		----- % DM Losses -----	
Cutter Bar	Fluted Rolls	3.89	7.50
Disc Mower	Fluted Rolls	5.93	8.98
Disc Mower	Steel Flails	7.25	10.95

The Michigan study also compared drying rates (Table 2). Notice there were little differences in drying rate between conditioners when they were properly adjusted! The major difference was between forage in a swath or windrow.

Table 2. Leaf loss and drying rates affected by conditioner roller type.

Roller Type	Leaf Loss	Drying Rate (per hour)	
	% DM	Swath	Windrow
Tire Cord	5.38	0.18	0.13
Intermeshing Steel	5.38	0.17	0.13
Intermeshing Rubber	5.17	0.21	0.16
Rubber and Steel	5.72	0.20	0.15
LSD	0.67	0.047	0.074

(SOURCE: Dan Undersander, Univ. of Wisconsin)

UK ROBINSON STATION HOST ALL COMMODITY FIELD DAY

The University of Kentucky's College of Agriculture will be hosting this year's "All Commodity Field Day" at the UK Robinson Station located in Quicksand, Kentucky on July 17, 2003. The day-long event begins with morning workshops in: Beef and Forage Production; Small Fruit Management; Athletic Turf Management and Goat Production. A tour of the Robinson Forest will leave from the Robinson Station and return in time for the afternoon program that begins with registration at 2:00 p.m. The Pride of the Mountains Goat Show will begin with weigh-in at 1:00 p.m. followed by showmanship classes starting at 2:00 p.m. Agronomy, Horticulture and Wood Utilization Center field tours will begin at 3:30 p.m. and conclude at 6:30 p.m. with Dinner. For more information contact Dr. Terry Jones at 606-666-2438 Ext. 234 or visit our web site at: www.ca.uky.edu/robinsonstation.

Beef and Forage Workshop Program

Time: 10:00 a.m.- 2:30 p.m. (Lunch provided)

Forage Improvement - Interseeding legumes; Methodology; Legume species and varieties

Forage Utilization - Rotational grazing with alfalfa; Fencing and water facilities; Round bale silage; Mineral

Herd Health - Reproductive Mgt.; Vaccination Program ; Working Facilities Design

Marketing

Agronomy Tour Program

Time 3:30 p.m. – 6:30 p.m. (Dinner served)

* Tall Ironweed Control in Pastures
* Corn: A livestock forage in Kentucky
* Warm-season grasses for Kentucky
* Meeting the nutritional requirements of a horse with forages

IMPACT OF ALFALFA CUTTING HEIGHT ON YIELD AND QUALITY

In a recent conversation with Dr. Dan Undersander, Extension Forage Specialist at the University of Wisconsin, he shared results of an experiment he conducted on alfalfa cutting height. By lowering the cutting height from 3 inches to 1 inch, he found a reduction in forage quality of 5 Relative Feed Value parts for every inch. This reduction is undetectable since he was harvesting more "lower quality" stems. Assuming that each RFV part is worth approximately $0.85 that is a reduction of $8.50. He also studied the impact of reducing the cutting height on yield and found that lowering the cutting height impeded yield by 0.5 T/A/inch. Lowering the cutting height from 3 to 1 inch resulted in an increase in yield of one ton which was valued at $80.00.

KENTUCKY PLAYS PROMINENT ROLE AT NATIONAL LEVEL

Several from Kentucky attended and participated in the American Forage and Grassland Council Annual Meeting held in Lafayette, Louisiana April 26-30. Dan Grigson and Tim Phillips received the AFGC Merit Award, Tom Keene was inducted as President and Ken Johnson as Vice President. Phil Howell was elected to the Board of Directors. Russell Hackley serves as a

member of the AFGC Board. Jimmy Henning and Garry Lacefield were invited speakers at the Clover Symposium and Jimmy Thompson participated in the Forage Spokesman Contest. Warren and Betty Thompson were special dinner guests of the Forage & Grassland Foundation. Betty and Warren played critical roles in the formation of the Foundation over twenty years ago. Byron Sleugh, Todd Willian and Nevil Speer, along with twelve students from Western Kentucky University, were also in attendance. Dr. Sleugh and David Embrey both presented papers. Others in attendance included: Bill Talley, John James, Phyllis Thompson, Karen Johnson, Kevin Lyons and Ron Catchen.

COOL SEASON PASTURES AND MEAT GOAT INTERACTION

Factors Affecting Feed Intake

Pasture height is one of the critical factors affecting diet selection by goats. The following information, gathered by New Zealand researchers, indicates that goats are more affected by pasture height than are sheep or cattle. As pasture height decreases, goats are much less likely to maintain their daily feed intake, as are cattle. This was most evident when pasture height dropped to 1500 lbs of dry matter per acre. This is approximately 1.5 inches of pasture height. Secondly, when compared to sheep, goats were less able to maintain feed intake when there is a slow decline in pasture height. This simulates conditions where goats are placed in a single field without rotation and they slowly graze the field down (Table 1). The best of the pasture is grazed first leaving the less desirable plant parts. On the other hand, when pasture heights drop quickly, say in one day of grazing one small pasture block, with daily rotation to new pasture, little difference in feed intake was observed between goat, cattle or sheep. These results have implications for feed allowance and grazing management of goats. Especially when high performance is desired.

Table 1. Pasture Mass (Lbs Dry Matter/Acre)

Animal Class	1600 *(1.5-2.0" height)*	2000 *(2.5-3.0") height*	2500 *(3.5-4.0") height*
Doe Wt. (grams/day)	-14	-5	15
Kids Wt. (grams/day)	54	71	81

From McCall: 1987 – Goat Tech 87 National Goat Seminar
Height of pasture is for perspective only.

Table 2 shows the results from a study conducted on yearling Cashmere does. As with all young livestock, transitional females must maintain enough feed intake to sustain body growth and maturation, and secondly to breed, grow and sustain the fetus. This information indicates that goats need high intake levels in order to achieve basic productivity needs. A difference of 800 lbs/acre in dry matter increased the observed puberty and pregnancy rate 55 and 60%, respectively. Due to the rapid feed turnover rate, goats require higher forage alliance than do sheep or cattle. This table indicates a need to move grazing goats to new pasture once dry matter residuals drop to a minimum of 2000 lbs of dry matter/ acre or 2.5 – 3.0 inches of grazing height. Therefore the beginning height of the pasture may have been 4 to 8 inches high, however, goats must be moved to fresh pasture once the grazing height drops to 2.5 inches.

Table 2. Residual Pasture Cover (Lbs Dry Matter/Acre)

PERFORMANCE INDICATOR	2000	1200
% Puberty	69	38
% Pregnant	42	26
Hair Production grams/head	59	54

From McCall: 1987 – Goat Tech 87 National Goat Seminar

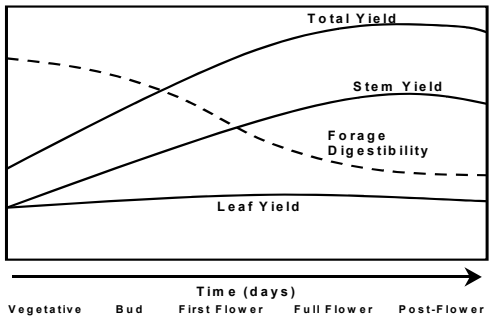
Management Implications

1. Height of pasture is more closely associated with dry matter intake for meat goats than for sheep or cattle.
2. Goats feed in a selective manner. In set stock (continuous graze single pasture) goats will select the highest quality feed until the overall quality of the pasture has been seriously reduced. Goats will not perform as well as cattle and sheep on low quality pastures.
3. As forage become more limited, goats become less selective and consume both the highly desirable as well as the less desirable feeds. In this case, there is little reduction in intake and is comparable to the intake of both cattle and sheep. When goats are less selective, lower quality feed components are consumed with the high quality portions and the overall quality is averaged between the feed quality components. Therefore, intake is not reduced.

Animal Class Grazing Strategy

1. Feeder kids, bred yearlings, last trimester and lactating does should graze on 6 to 8 inch pastures. Pasture residual height should not be reduced more than 3 inches. Goats should be allotted as much as 6 to 15 lbs of dry matter daily depending on the weight of the animal. Frequent rotation allows daily feed allotment to be set as low as 3 and 8 lbs daily. This type of management is appropriate for creep grazing high quality forages such as alfalfa or ryegrass. In order to assure good pasture utilization, cows and dry does can follow the first grazers. Follower goats are subject to high parasite loads due to pasture contamination from the first grazers. Cows are not affected and their grazing will reduce larva numbers on the pasture.
2. Mature dry does can maintain themselves on 3 and 4 inches of pasture and can be grazed with cattle. Generally speaking 4 to 5 lbs of dry matter/head per day can be budgeted for mature dry does.
3. Grazing on short pastures is an effective means of reducing overweight females. *(Terry Hutchens Extension Associate – Goat Production, Univ. of Kentucky & Kentucky State Univ.)*

RELATIONSHIP BETWEEN YIELD AND QUALITY



UPCOMING EVENTS

JUN 12	UK Agronomy Field Day, Lexington
JUN 17-18	Kentucky Grazing School, Bourbon County Extension Office, Paris
JUL 17	UK All Commodity Field Day, Robinson Station, Quicksand
JUL 24	South Central Kentucky Agriculture Field Day, Bowling Green
NOV 25	Grazing Conference, Fayette County Extension Office, Lexington

2004

JAN 9	Forages at KCA, Bowling Green
FEB 26	24th Kentucky Alfalfa Conference, Cave City

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